Measures of Central Tendency

Statistics

- the study of sets of **numerical data**

Measures of Central Tendency

-a single **number** that is representative of the

data as a whole

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Mean

- also known as the **average**. The mean is found by adding up all of the given data and dividing by the number of data entries.

Median

- the **middle number**. First you arrange the numbers in order from lowest to highest, then you find the middle number by crossing off the numbers until you reach the middle.

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Statistical Study

   - Observation of a population to obtain data

Census

   - A survey in which **every person** is counted

Sample

   - A **portion** of the items being studied

Fair Sample

   - A **sample** which reflects the whole population

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Outliers

  -members of **data set** that are far away from the rest of the data
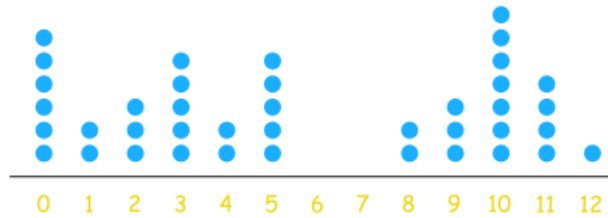
   - Can affect the **average**

Quantitative Data

  -Deals with **numbers**.

  -Data which can be **measured**.

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Dot Plot

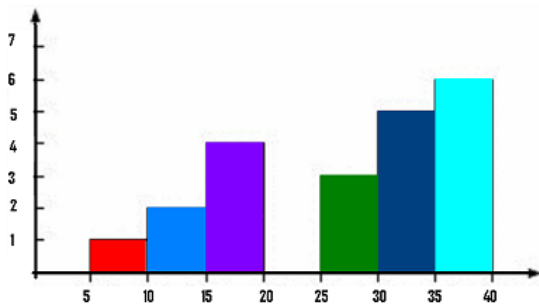-a set of data is represented by using dots over a number line

Frequency table

-is a table that shows the total for each category or group of data.

Histogram

-A graphical display where the data is grouped into ranges and then plotted as bars

Class Limits	Frequency	Cum Frequency
5-10	1	1
10-15	2	3
15-20	4	7
20-25	0	7
25-30	3	10
30-35	5	15
35-40	6	21

1. HISTOGRAM   2. FREQUENCY DISTRIBUTION TABLE

Exercise # 1:

Students in Mr. Okafor's algebra class were trying to determine if people speed along a certain section of roadway. They collected speeds of 20 vehicles, as displayed in the table below.

(a) Find the mean and median for this data set

Speed (mph)	Number of Cars	
29	1	29
33	2	66
34	4	136
35	5	175
36	3	108
38	2	76
39	2	78
54	1	54

20 cars   722

$$\text{Mean} = \frac{\text{Sum}}{\text{total}}$$

$$= \frac{722}{20}$$

$$\text{Mean} = 36.1$$

$$\overline{X}$$

Median = 35

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Exercise # 1:

(b) The speed limit along this part of the highway is 35 mph your results from part (a), is it fair to make the conclusion that the average driver does speed on this roadway?

No they do not speed
as more than $\frac{1}{2}$ the
drivers go less than or equal to
35 mph.

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Exercise # 2:

To determine which television programs are the most popular in a large city, a poll is conducted by selecting a sample of people at random and interviewing them. Outside which of the following locations would the interviewer be most likely to find a fair sample?
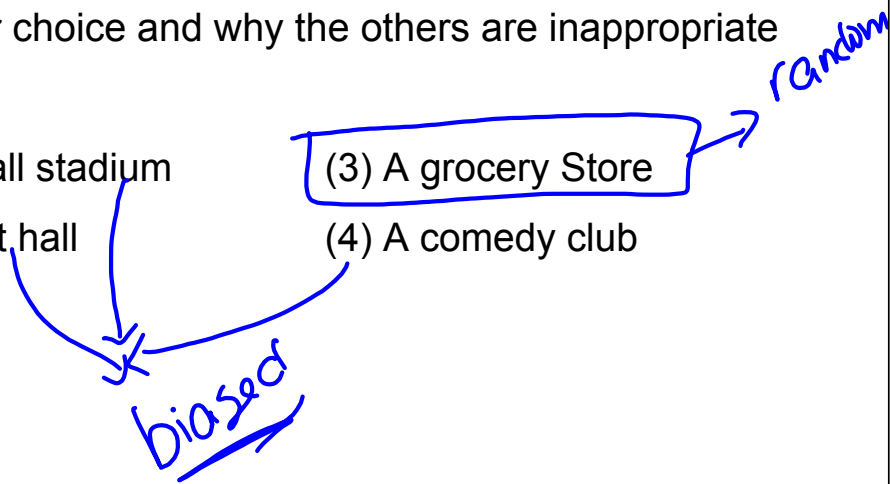
Explain your choice and why the others are inappropriate

~ *random*

(1) A baseball stadium   (3) A grocery Store
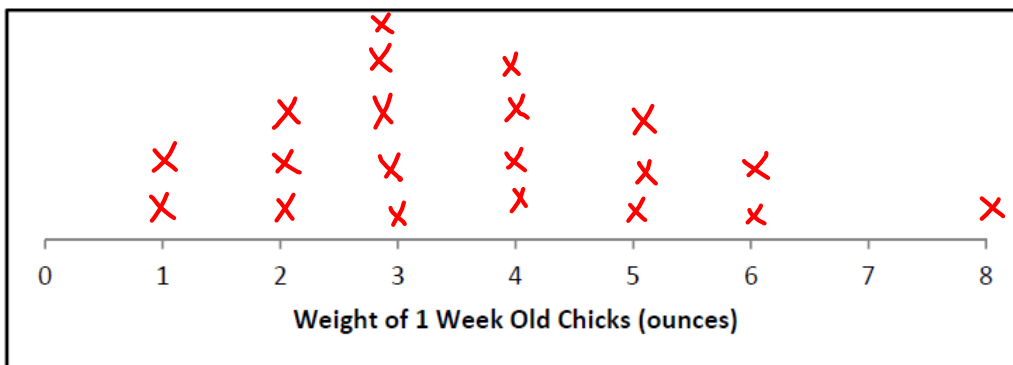
(2) A concert hall   (4) A comedy club

biased

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Exercise #3: A farm is studying the weight of baby chickens (chicks) after 1 week of growth. They find the weight, in ounces, of 20 chicks. The weights are shown below. Construct a dot plot on the axes given.

2, 1, 3, 4, 2, 2, 3, 1, 5, 3, 4, 4, 5, 6, 3, 8, 5, 4, 6, 3

Weight of 1 Week Old Chicks (ounces)
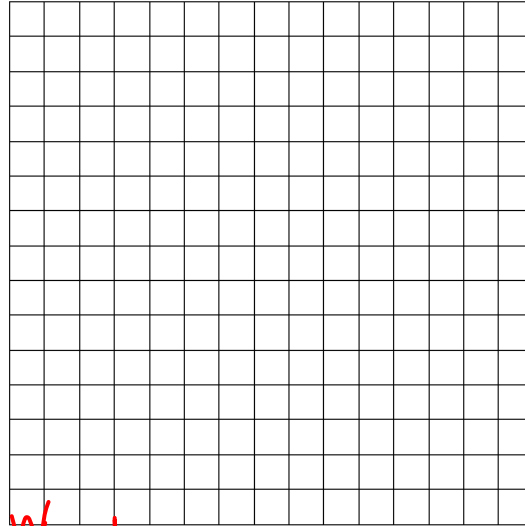
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Exercise #4: The 2006 – 2007 Arlington High School Varsity Boy's basketball team had an excellent season, compiling a record of 15 – 5 (15 wins and 5 losses). The total points scored by the team for each of the 20 games are listed below in the order in which the games were played:

76, 55, 76, 64, 46, 91, 65, 46, 45, 53, 56, 53, 57, 67, 58, 64, 67, 52, 58, 62

(a) Complete the frequency table below.

POINTS SCORED	TALLY	FREQUENCY
40 - 49	|||	3
50 - 59	⊮⊮ |||	8
60 - 69	⊮⊮		6
70 - 79	||	2
80 - 89		0
90 - 99			1

(b) Construct the histogram below.

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